Why Bad Beliefs Don't Die

Because beliefs are designed to enhance our ability to survive, they are biologically designed to be strongly resistant to change. To change beliefs, skeptics must address the brain's "survival" issues of meanings and implications in addition to discussing their data.

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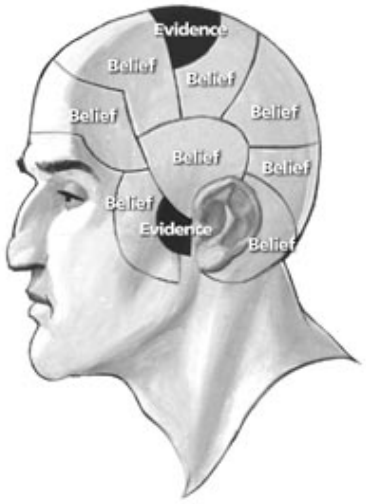

Because a basic tenet of both skeptical thinking and scientific inquiry is that beliefs can be wrong, it is often confusing and irritating to scientists and skeptics that so many people's beliefs do not change in the face of disconfirming evidence. How, we wonder, are people able to hold beliefs that contradict the data?

This puzzlement can produce an unfortunate tendency on the part of skeptical thinkers to demean and belittle people whose beliefs don't change in response to evidence. They can be seen as inferior, stupid, or crazy. This attitude is born of skeptics' failure to understand the biological purpose of beliefs and the neurological necessity for them to be resilient and stubbornly resistant to change. The truth is that for all their rigorous thinking, many skeptics do not have a clear or rational understanding of what beliefs are and why even faulty ones don't die easily. Understanding the biological purpose of beliefs can help skeptics to be far more effective in challenging irrational beliefs and communicating scientific conclusions.

Biology and Survival

Our brain's primary purpose is to keep us alive. It certainly does more than that, but survival is always its fundamental purpose and always comes first. If we are injured to the point where our bodies only have enough energy to support consciousness or a heartbeat but not both, the brain has no problem choosing-it puts us into a coma (survival before consciousness), rather than an alert death-spiral (consciousness before survival).

Because every brain activity serves a fundamental survival purpose, the only way to accurately understand any brain function is to examine its value as a tool for survival. Even the difficulty of successfully treating such behavioral disorders as obesity and addiction can only be understood by examining their relationship to survival. Any reduction in caloric intake or in the availability of a substance to which an individual is addicted is always perceived by the brain as a threat to survival. As a result the brain powerfully defends the overeating or the substance abuse, producing the familiar lying, sneaking, denying, rationalizing, and justifying

Resources

- International Network of Skeptical Organizations
- Archives
- Skeptic Bibliography
- Links

commonly exhibited by individuals suffering from such disorders.

Senses and Beliefs

One of the brain's primary tools for ensuring survival is our senses. Obviously, we must be able to accurately perceive danger in order to take action designed to keep us safe. In order to survive we need to be able to see the lion charging us as we emerge from our cave or hear the intruder breaking into our house in the middle of the night.

Senses alone, however, are inadequate as effective detectors of danger because they are severely limited in both range and scope. We can have direct sensory contact with only a small portion of the world at any one time. The brain considers this to be a significant problem because even normal, everyday living requires that we constantly move in and out of the range of our perceptions of the world as it is *right now*. Entering into territory we have not previously seen or heard puts us in the dangerous position of having no advance warning of potential dangers. If I walk into an unfamiliar building in a dangerous part of town my survival probabilities diminish because I have no way of knowing whether the roof is ready to collapse or a gunman is standing inside the doorway.

Enter beliefs. "Belief" is the name we give to the survival tool of the brain that is designed to augment and enhance the danger-identification function of our senses. Beliefs extend the range of our senses so that we can better detect danger and thus improve our chances of survival as we move into and out of unfamiliar territory. Beliefs, in essence, serve as our brain's "long-range danger detectors."

Functionally, our brains treat beliefs as internal "maps" of those parts of the world with which we do not have immediate sensory contact. As I sit in my living room I cannot see my car. Although I parked it in my driveway some time ago, using only immediate sensory data I do not know if it is still there. As a result, at this moment sensory data is of very little use to me regarding my car. In order to find my car with any degree of efficiency my brain must ignore the current sensory data (which, if relied on in a strictly literal sense, not only fails to help me in locating my car but actually indicates that it no longer exists) and turn instead to its internal map of the location of my car. This is my *belief* that my car is still in my driveway where I left it. By referring to my belief rather than to sensory data, my brain can "know" something about the world with which I have no immediate sensory contact. This "extends" my brain's knowledge of and contact with the world.

The ability of belief to extend contact with the world beyond the range of our immediate senses substantially improves our ability to survive. A caveman has a much greater ability to stay alive if he is able to maintain a belief that dangers exist in the jungle even when his sensory data indicate no immediate threat. A police officer will be substantially more safe if he or she can continue to believe that someone stopped for a traffic violation could be an armed psychopath with an impulse to kill even though they present a seemingly innocuous appearance.

Beyond the Sensory

Because beliefs do not require immediate sensory data to be able to feed valuable survival information to the brain, they have the additional survival function of providing information about the realm of life that does not deal directly with sensory entities. This is the area of abstractions and principles that involves such things as "reasons," "causes," and "meanings." I cannot hear or see the "reason" called a "low pressure zone" that makes a thunderstorm rain on my parade, so my ability to *believe* that low pressure is the

reason assists me. If I were to rely strictly on my senses to determine the cause of the storm I could not tell why it occurred. For all I know it was dragged in by invisible flying gremlins that I need to shoot with my shotgun if I want to clear away the clouds. Therefore my brain's reliance on my "belief" in the reason called "low pressure," rather than on sensory data (or, as in the case of my car, my lack of it) assists in my survival: I avoid an experience of incarceration with myriad dangerous characters following my arrest for shooting into the air at those pesky little gremlins.

The Resilience of Beliefs

Because senses and beliefs are both tools for survival and have evolved to augment one another, our brain considers them to be separate but equally important purveyors of survival information. The loss of either one endangers us. Without our senses we could not know about the world within our perceptual realm. Without our beliefs we could not know about the world outside our senses or about meanings, reasons, or causes.

This means that beliefs are designed to operate independent of sensory data. In fact, *the whole survival value of beliefs is based on their ability to persist in the face of contradictory evidence*. Beliefs are not *supposed* to change easily or simply in response to disconfirming evidence. If they did, they would be virtually useless as tools for survival. Our caveman would not last long if his belief in potential dangers in the jungle evaporated every time his sensory information told him there was no immediate threat. A police officer unable to believe in the possibility of a killer lurking behind a harmless appearance could easily get hurt or killed.

As far as our brain is concerned, there is absolutely no need for data and belief to agree. They have each evolved to augment and supplement one another by contacting different sections of the world. They are designed to be able to disagree. This is why scientists can believe in God and people who are generally quite reasonable and rational can believe in things for which there is no credible data such as flying saucers, telepathy, and psychokinesis.

When data and belief come into conflict, the brain does not automatically give preference to data. This is why beliefs-even bad beliefs, irrational beliefs, silly beliefs, or crazy beliefs-often don't die in the face of contradictory evidence. The brain doesn't care whether or not the belief matches the data. It cares whether the belief is helpful for survival. Period. So while the scientific, rational part of our brains may think that data should supercede contradictory beliefs, on a more fundamental level of importance our brain has no such bias. It is extremely reticent to jettison its beliefs. Like an old soldier with an old gun who does not quite trust that the war is really over, the brain often refuses to surrender its weapon even though the data say it should.

"Inconsequential" Beliefs

Even beliefs that do not seem clearly or directly connected to survival (such as our caveman's ability to believe in potential dangers) are still closely connected to survival. This is because beliefs do not occur individually or in a vacuum. They are related to one another in a tightly interlocking system that creates the brain's fundamental view of the nature of the world. It is this system that the brain relies on in order to experience consistency, control, cohesion, and safety in the world. It must maintain this system intact in order to feel that survival is being successfully accomplished.

This means that even seemingly small, inconsequential beliefs can be as integral to the brain's experience of survival as are beliefs that are "obviously" connected to survival. Thus, trying to change

any belief, no matter how small or silly it may seem, can produce ripple effects through the entire system and ultimately threaten the brain's experience of survival. This is why people are so often driven to defend even seemingly small or tangential beliefs. A creationist cannot tolerate believing in the accuracy of data indicating the reality of evolution not because of the accuracy or inaccuracy of the data itself, but because changing even one belief related to matters of the Bible and the nature of creation will crack an entire system of belief, a fundamental worldview and, ultimately, their brain's experience of survival.

Implications for Skeptics

Skeptical thinkers must realize that because of the *survival* value of beliefs, disconfirming evidence will rarely, if ever, be sufficient to change beliefs, even in "otherwise intelligent" people. In order to effectively change beliefs skeptics must attend to their survival value, not just their *data-accuracy* value. This involves several elements.

First, skeptics must not expect beliefs to change simply as the result of data or assuming that people are stupid because their beliefs don't change. They must avoid becoming critical or demeaning in response to the resilience of beliefs. People are not necessarily idiots just because their beliefs don't yield to new information. Data is always necessary, but it is rarely sufficient.

Second, skeptics must learn to always discuss not just the specific topic addressed by the data, but also the *implications that changing the related beliefs will have for the fundamental worldview and belief system of the affected individuals*. Unfortunately, addressing belief systems is a much more complicated and daunting task than simply presenting contradictory evidence. Skeptics must discuss the meaning of their data in the face of the brain's need to maintain its belief system in order to maintain a sense of wholeness, consistency, and control in life. Skeptics must become adept at discussing issues of fundamental philosophies and the existential anxiety that is stirred up any time beliefs are challenged. The task is every bit as much philosophical and psychological as it is scientific and data-based.

Third, and perhaps most important, skeptics must always appreciate how hard it is for people to have their beliefs challenged. It is, quite literally, a threat to their brain's sense of survival. It is entirely normal for people to be defensive in such situations. The brain feels it is fighting for its life. It is unfortunate that this can produce behavior that is provocative, hostile, and even vicious, but it is understandable as well.

The lesson for skeptics is to understand that people are generally not intending to be mean, contrary, harsh, or stupid when they are challenged. It's a fight for survival. The only effective way to deal with this type of defensiveness is to de-escalate the fighting rather than inflame it. Becoming sarcastic or demeaning simply gives the other person's defenses a foothold to engage in a tit-for-tat exchange that justifies their feelings of being threatened ("Of course we fight the skeptics-look what uncaring, hostile jerks they are!") rather than a continued focus on the truth.

Skeptics will only win the war for rational beliefs by continuing, even in the face of defensive responses from others, to use behavior that is unfailingly dignified and tactful and that communicates respect and wisdom. For the data to speak loudly, skeptics must always refrain from screaming.

Finally, it should be comforting to all skeptics to remember that the truly amazing part of all of this is not that so few beliefs change or that people can be so irrational, but that anyone's beliefs ever change at all. Skeptics' ability to alter their own beliefs in response

to data is a true gift; a unique, powerful, and precious ability. It is genuinely a "higher brain function" in that it goes against some of the most natural and fundamental biological urges. Skeptics must appreciate the power and, truly, the dangerousness that this ability bestows upon them. They have in their possession a skill that can be frightening, life-changing, and capable of inducing pain. In turning this ability on others it should be used carefully and wisely. Challenging beliefs must always be done with care and compassion.

Skeptics must remember to always keep their eye on the goal. They must see the long view. They must attempt to win the war for rational beliefs, not to engage in a fight to the death over any one particular battle with any one particular individual or any one particular belief. Not only must skeptics' methods and data be clean, direct, and unbiased, their demeanor and behavior must be as well.

Related Information

- Search CSICOP: belief*

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